

SYSTEM AND METHOD FOR DESIGNING AND OPTIMIZING THE  
MEMORY OF AN EMBEDDED PROCESSING SYSTEM

## ABSTRACT OF THE DISCLOSURE

There is disclosed an apparatus for designing and optimizing  
5 a memory for use in an embedded processing system. The apparatus  
comprises: 1) a simulation controller for simulating execution of  
a test program to be executed by the embedded processing system;  
10 2) a memory access monitor for monitoring memory accesses to a  
simulated memory space during the simulated execution of the test  
program, wherein the memory access monitor generates memory usage  
statistical data associated with the monitored memory accesses; and  
15 3) a memory optimization controller for comparing the memory usage  
statistical data and one or more predetermined design criteria  
associated with the embedded processing system and, in response to  
the comparison, determining at least one memory configuration  
capable of satisfying the one or more predetermined design  
criteria.